APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/876,492	06/07/2001	Madhav Mutalik	E00295/70144 (EJR)	9317

23628 7590 05/11/2005	EXAMINER	
WOLF GREENFIELD & SACKS, PC	JACOBS, LASHONDA T	
FEDERAL RESERVE PLAZA		
600 ATLANTIC AVENUE	ART UNIT	PAPER NUMBER
BOSTON, MA 02210-2211	2157	

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _9 February 2005_.

2a)☒ This action is **FINAL**.　　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-36_ is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-36_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
　　　　application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

This is a Final Office Action in response to Applicants' amendment filed on February 9, 2005.

Claims 1,14, 24 have been amended. Claims 1-36 are presented for further examination.

Claim Rejections - 35 USC § 112

1.   Claims 1, 3, 14, 16, 23, 24 and 26 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. Examiner is unclear as to the meaning changing a state of the

second storage area from the first state to a second state. Examiner perceives a state to be a

mode or condition or stage until further clarification by the Applicants.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

3.   Claims **1-36** are rejected under 35 U.S.C. 102(e) as being anticipated by DeKoning (U.S.

Pat. No. 6,691,245).

As per claims **1**, **23** and **24**, DeKoning discloses a method, system and computer-readable medium for mirroring data of a first storage area, comprising:

- placing a second storage area in a first state wherein updates to the first storage area are made to the second storage area (col. 5, lines 47-49 and col. 7, lines 22-39);

- mirroring data from the first storage area to the second storage area while the second storage are is in the first state (col. 7, lines 6-15);

- changing a state of the second storage area from the first state to a second state in which updates to the first storage area are not made to the second storage area (col. 7, lines 22-39); and

- restoring data to the first storage area from the second storage area while maintaining the second storage area in the second state (col. 8, lines 24-44).

As per claim **14**, DeKoning discloses a storage system comprising:

- a first (local) storage area (col. 6, lines 42-45);

- a second (remote) storage area (col. 6, lines 42-45); and

at least one controller that:

- places the second storage area in a first state wherein updates to the first storage area are made to the second storage area (. 5, lines 47-49 and col. 7, lines 22-39);

- mirrors data from the first storage area to the second storage area while the second storage are is in the first state (col. 7, lines 6-15);

- changes a state of the second storage area from the first state to a second state in which updates to the first storage area are not made to the second storage area (col. 7, lines 22-39); and

- restores data to the first storage area from the second storage area while maintaining the second storage area in the second state (col. 8, lines 24-44).

As per claims **2**, **15** and **25**, DeKoning further discloses:

- writing, only to the first storage area, any data received during the act of restoring (col. 8, lines 33-44).

As per claims **3**, **16** and **26**, DeKoning further discloses:

- maintaining, after the act of restoring is complete, the second storage area in the second state(col. 8, lines 24-44).

As per claims **4**, **17** and **27**, DeKoning further discloses:

- receiving a read request issued by a host (col. 9, lines 53-62).; and

- reading, during the act of restoring, data from the second storage area in response to the read request when the data has not been restored to the first storage area (col. 9, lines 25-44).

As per claims **5**, **18** and **28**, DeKoning discloses:

- wherein the act of changing further comprises allowing the second storage area to be accessed independently from the first storage area (col. 7, lines 58-66).

As per claims **6**, **19** and **29**, DeKoning discloses:

- wherein the act of restoring includes performing an incremental restore of data from the second storage area to the first storage area (col. 7, lines 22-35).

As per claims **7**, **20** and **30**, DeKoning discloses:

- wherein the act of restoring includes performing a full restore of data from the second storage area to the first storage area (col. 9, lines 39-57).

As per claims **8**, **21** and **31**, DeKoning further discloses:

- assigning an address to the second storage area, the second storage area being capable of being accessed through the address independently from an address of the first storage area (col. 9, lines 22-31).

As per claims **9** and **22**, DeKoning discloses:

- wherein the first storage area and second storage area are respectively located on first and second logical volumes of a storage system (col. 6, lines 58-60).

As per claims **10** and **33**, DeKoning further discloses:

- indicating whether data has been restored to the first storage area from the second storage area (col. 9, lines 25-44).

As per claims **11** and **34**, DeKoning further discloses:

- restoring data read from the second storage area to the first storage area (col. 9, lines 25-44).

As per claims **12** and **35**, DeKoning discloses:

- wherein at least one of the placing, mirroring, changing, and restoring acts is initiated by a command issued at a host computer (col. 9, lines 39-51).

As per claims **13**, DeKoning discloses:

- wherein, after the changing act, the second storage area contains a snapshot of data of the first storage area at a given time (col. 7, lines 22-35); and

wherein the method further comprises:

- updating, after the restoring act is complete, data within the first storage area such that the updated data within the first storage area is different from the snapshot of data (col. 9, lines 45-57); and

- restoring, from the second storage area, the snapshot data to replace the updated data within the first storage area (col. 8, lines 33-44).

As per claims **36**, DeKoning discloses:

- causing the computer to perform updating after the restoring act is complete, data within the first storage area (col. 9, lines 45-57); and

- restoring, from the second storage area, data to replace the updated data within the first storage area (col. 8, lines 33-44).

Response to Arguments

4.   Applicant's arguments with respect to claims 1-36 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 6,499,091 to Bergsten

U.S. Pat. No. 6,324,654 to Wahl et al

U.S. Pat. No. 5,835,953 to Ohran

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to LaShonda T. Jacobs whose telephone number is 571-272-4004.

The examiner can normally be reached on 8:30 A.M.-5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.
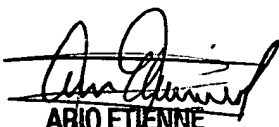
Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LaShonda T Jacobs
Examiner
Art Unit 2157

ltj
May 4, 2005

ARIO ETIENNE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100